

CLAIM AMENDMENTS

1. (Currently Amended) An x-ray exposure method comprising directing ~~an x-ray x-~~ rays generated ~~from~~ by an x-ray source to illuminate, through a mask, a resist ~~stacked~~ on a substrate with a lower layer film ~~posed therebetween~~ interposed between the resist and the substrate, wherein

~~said the lower layer film containing an element~~ contains C, and being composed in such a way that an, of elements contained within the lower layer, the element absorbing a largest amount of x-rays of elements contained in the lower layer film is the element C, and

when ~~a film~~ thickness of ~~said the lower layer film~~ is  $t$  (nm), a density of ~~said the lower layer film~~ is  $\rho$  (g/cm<sup>3</sup>), ~~an~~ absorption edge of an element absorbing a largest amount of x-rays of elements contained in ~~said the substrate~~ is  $A_s$  (angstrom), a K-shell absorption edge of ~~the element C~~ is  $A_c$  (angstrom), and ~~an~~ absorption edge of an element absorbing a largest amount of x-rays of elements contained in ~~said the resist~~ is  $A_r$  (angstrom), then ~~a relation:~~  $0.5 \times A_r < 12.4 / ((t \times \rho / 46)^{(1/1.75)} + 12.4 / A_c) < A_r$  is satisfied, and

~~a relation:~~  $12.4 / ((t \times \rho / 46)^{(1/1.75)} + 12.4 / A_s) \leq \lambda \leq A_r$  is satisfied by an average wavelength  $\lambda$  (angstrom) of x-rays absorbed in ~~said the resist~~.

2. (Currently Amended) The x-ray exposure method according to claim 1, wherein the element absorbing a largest amount of x-rays of the elements contained in ~~said the resist~~ is ~~an element C1~~, and ~~a film~~ thickness of ~~said the resist~~ is no more than 100 nm.

3. (Currently Amended) The x-ray exposure method according to claim 2, wherein the ~~film~~ thickness of ~~said the resist~~ is no more than 40 nm.